

Amendments to the Specification

Please insert, immediately before “Background of the Invention” on page 1, the following sentence:

This application is a continuation of copending U.S. Application Serial No. 09/777,060, filed on February 5, 2001, which in turn is a continuation of U.S. Application Serial No. 09/207,821 filed on December 9, 1998.

Please replace the paragraph beginning on page 2, line 14 with the following rewritten paragraph:

The valve in accordance with the present invention, preferably includes a tension spring connected to a stopper to bias toward the valve seat. The spring is under greater tension loading when the stopper is in the second position [[that]] than when the stopper is in the first position. The spring can include an elongate shaft portion having a proximal end and a distal end. The proximal end of the shaft portion is preferably connected to the stopper and the distal end portion is preferably connected to a helical portion of the spring.

Please replace the paragraph beginning on page 4, line 18 with the following rewritten paragraph:

A valve seat 20 is disposed within housing 12. Valve seat 20 can be a narrow or constricted diameter region of the lumen 14. The diameter of seat 20 is D_1 (Radius, $R_1=D_1/2$). Distally of valve seat 20 is a first lumen portion 22 having a diameter D_3 [[D]] (Radius, $R_3=D_3/2$). Lumen 14 includes a second lumen portion 24, disposed distally of

first lumen portion 22, which has a diameter D_4 (Radius, $R_4=D_4/2$). Diameter D_4 is greater than diameter D_3 . Lumen 14 also includes a third lumen portion 26 disposed distally of second lumen portion 24. Third lumen portion 26 has a diameter D_5 which is less than diameter D_4 . Lumen 14 tapers along a slope 28 between second lumen portion 24 and third lumen portion 26.

Please replace the paragraph beginning on page 5, line 4 with the following rewritten paragraph:

Disposed within housing 12 is a stopper 30. Stopper 30 preferably has a proximal portion 31 configured for engagement with valve seat 20. Proximal portion 31 has a diameter of D_1 . Disposed distally of proximal portion 31 is a portion 32 having a diameter D_2 (Radius, $R_2 = R_2/2$) less than D_3 of first lumen portion 22. Yet more proximally distally, stopper 30 includes a plunger portion 34 having a diameter approximately equal to, but less than D_3 of first lumen portion 22. Stopper 30 includes a sloping portion 35 sloping from plunger portion 34 to the distal end of stopper 30. Stopper 30 can be from a polymer, metal or other biocompatible material.

Please replace the paragraph beginning on page 5, line 12 with the following rewritten paragraph:

Disposed within housing 10 is a spring 36 for biasing stopper 30 toward valve seat 20. Spring 36 is preferably disposed distally of valve seat 28. Spring 36 is preferably a tension spring include including an elongate shaft portion 40 having a proximal end connected to stopper 30 and a distal end connected to a helical spring

portion 38. The opposite end of spring portion 38, not connected to shaft 40, can be affixed to housing 12 at, for example, a circumferential stop 42. Spring 40 can be made from stainless steel, NiTi alloy or other biocompatible material and suitable for the intended use.

Please replace the paragraph beginning on page 5, line 20 with the following rewritten paragraph:

A preferred relationship between R_1 , R_2 , R_3 , and R_4 can be determined solving three equations. Assuming that R_4 , the maximum inner diameter radius of lumen 14, is [[a]] given and that $\Delta R = R_2 - R_1$, then R_1 , R_2 and R_3 can be found using the following formulas:

$$R_1 = \frac{-\Delta R + \sqrt{3 \cdot R_4^2 - 2 \cdot \Delta R^2}}{3} \quad (1)$$

$$R_2 = R_1 + \Delta R \quad (2)$$

$$R_3 = \sqrt{R_1^2 + R_2^2} \quad (3)$$